

The opinion in support of the decision being entered today is *not* binding  
precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* BRIAN MICHAEL BRIDGEWATER,  
MARTIN JOHN DEETZ, RALPH CRAIG EVEN,  
MATTHEW STEWART GEBHARD, and  
CAREN ANN PUSCHAK

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Appeal 2007-0504  
Application 10/700,078  
Technology Center 1700

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Decided: June 28, 2007

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Before BRADLEY R. GARRIS, CHUNG K. PAK, and  
CHARLES F. WARREN, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 1-7. We have jurisdiction over the appeal  
pursuant to 35 U.S.C. §§ 6 and 134.

We AFFIRM.

## INTRODUCTION

Appellants claim an aqueous coating composition comprising an aqueous acrylic emulsion polymer and a pigment (claims 1 and 2; Specification 1). Appellants indicate that the aqueous coating composition has improved scrub resistance and dirt pick-up resistance (Specification 2).

Claim 2 is illustrative:

2. An aqueous coating composition comprising a pigment and an aqueous acrylic emulsion polymer comprising, as copolymerized units, from 50 to 99.75% by weight, based on dry polymer weight, monoethylenically unsaturated nonionic (meth)acrylic monomer and from 0.25 to 10% by weight, based on dry polymer weight, monoethylenically unsaturated acid monomer, said polymer having a T<sub>g</sub> of -10 °C to 35 °C wherein said emulsion polymer is formed by emulsion polymerization at a temperature of from 70 °C to 99 °C in the presence of a thermal initiator, wherein said initiator is used in the amount of 0.05 to 0.3%, by weight, based on dry polymer weight, and wherein less than half of said initiator is present during the first 10%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer, and a neutralizer, wherein said neutralizer is used in the amount of from 5% to 75%, on an equivalents basis, based on said monoethylenically unsaturated acid monomer, and wherein less than half of said neutralizer is present during the first 25%, by weight, based on dry polymer weight, of the conversion of monomers to said emulsion polymer.

The Examiner relies on the following prior art reference as evidence of unpatentability:

Friel	US 5,731,377	Mar. 24, 1998
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The rejections as presented by the Examiner are as follows:

1. Claims 1-5, and 7 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Friel.

2. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Friel.<sup>1</sup>

Rather than reiterate the respective positions advocated by the Appellants and by the Examiner concerning these rejections, we refer to the Brief and to the Answer respectively for a complete exposition thereof.

Appellants do not separately argue the claims. Accordingly, we select independent claim 2, the broadest claim on appeal, as a representative claim on which to render our decision. Claim 2 does not require a “chain transfer agent” and, thus, is broader than claim 1.

## OPINION

### 35 U.S.C. §§ 102(b)/103(a) REJECTIONS OVER FRIEL

Because of the phrase “said emulsion polymer is formed by emulsion polymerization,” the Examiner construed claim 2 as a product-by-process claim (Answer 3). Appellants have not contested that claim construction. Like the Examiner, we treat claim 2 as a product-by-process claim in our analysis of the Examiner’s rejections.

Appellants argue that the data contained in Table 4.1 on page 20 of the Specification refutes the Examiner’s contention “that, on the basis of similarities in monomer compositions, it may be concluded that emulsion

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<sup>1</sup> The rejection of claim 6 under § 103(a) over Friel appears in the Supplemental Answer on page 5, but does not appear in the final Office Action mailed September 15, 2005. However, the rejection of claim 6 under § 103(a) over Friel does appear in the non-final Office Action mailed April 4, 2005. Appellants state that “Claims 1-7 stand finally rejected under 35 USC 103(a) as being unpatentable over Friel.” (Br. 4). Thus it is evident from the record that Appellants and the Examiner understand that claim 6 is finally rejected under § 103(a) over Friel (Br. 4, Supplemental Answer 3, 5).

polymers made by a given process are the same as, or obvious in light of, emulsion polymers made by another process” (Br. 5). Specifically, Appellants argue that the data in Table 4.1 demonstrates that emulsion polymers made by different processes have “large differences” in the scrub resistance of the polymers (Br. 5).

We have considered and are not persuaded by Appellants’ arguments for the reasons below.

Generally, “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. . . . The patentability of a product does not depend on its method of production. . . . If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” (citations omitted). *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 799, 803, 218 USPQ 289, 292 (Fed. Cir. 1983); *see also, In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed. Cir. 1986). Additionally, where the Patent and Trademark Office has reason to believe that a functional limitation in a product-by-process claim asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art

does not possess the characteristic relied on. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). It is elementary that the mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not cause a claim drawn to those things to distinguish over the prior art. *Id.*; *see also In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

Friel discloses a blend of emulsion polymers useful as a film forming binder component in an aqueous coating composition (Friel, col. 1, ll. 7-9). Friel further discloses that “hardness” of the coating is an important physical characteristic of the coating and that the “hardness” is a function of the Tg (i.e., glass transition temperature) of the polymeric binder (Friel, col. 1, ll. 40-43). Friel manipulates the Tg of the polymer by controlling the amount of “hard” and “soft” emulsion polymer added to form the polymer blend of the aqueous coating composition (Friel, col. 2, ll. 60-67). The “hard” and “soft” polymers are formed by a polymerization reaction in which, for example, a monomer emulsion of butyl acrylate and methyl methacrylate (i.e., “monoethylenically unsaturated non-ionic (meth)acrylic monomer” as claimed), methacrylic acid (i.e., “monoethylenically unsaturated acid monomer” as claimed), styrene, anionic surfactant, and an adhesion promoter are reacted with ammonium persulfate (i.e., the “thermal initiator” as claimed) and neutralized using sodium carbonate (i.e., the “neutralizer” as claimed) (Friel, col. 6, ll. 35-58; col. 7, Table 1; col. 8, ll. 30-49). The emulsion polymer produced by the polymerization process is then mixed with pigment and other compounds to form an aqueous paint formulation (Friel, col. 9, Table 2).

From the foregoing and the Examiner's rationale on pages 3 and 4 of the Answer, the Examiner has established a prima facie case that Friel's aqueous coating composition appears to be the same as Appellants' claimed composition such that Friel's composition anticipates or, in the alternative, renders obvious Appellants' aqueous coating composition. *Marosi*, 710 F.2d at 803, 218 USPQ at 292. Accordingly, the burden has shifted to Appellants to come forward with evidence establishing an unobvious difference between the claimed product and Friel's aqueous coating composition to rebut the Examiner's prima facie case. *Id.*

Attempting to satisfy their burden, Appellants filed a Declaration of Dr. Matthew S. Gebhard (Gebhard Declaration) on November 15, 2005 with their response to the final Office Action of September 15, 2005. The Examiner considered the Gebhard Declaration and found it to be not persuasive because it was based on the opinion of Dr. Gebhard, not factual evidence (Answer 5-6).

A copy of the Gebhard Declaration is filed with the Brief in the "Evidence Appendix." The Declaration indicates that, in Dr. Gebhard's opinion, the amount of rheology modifier does not affect the scrub resistance of the aqueous coating composition (Gebhard Declaration 2). However, the Gebhard Declaration fails to rebut the Examiner's prima facie case of either anticipation or obviousness. Specifically, the Gebhard Declaration fails to establish that there is any difference, much less an unobvious difference, between Friel's aqueous coating composition and Appellants' claimed aqueous coating composition. *Marosi*, 710 F.2d at 803, 218 USPQ at 292.

Appellants further attempt to satisfy their burden by relying on Table 4.1 on page 20 of their Specification (Br. 5). According to Appellants, Table

4.1 shows “large differences . . . in scrub resistance” for polymers made by different processes (Br. 5-6). However, Appellants do not establish how Table 4.1 and the data contained therein regarding Examples 1 and 2 and Comparative Examples A, B, C, and D compare with Friel’s aqueous coating composition. Appellants have not proffered a comparison between Friel’s aqueous coating composition and Appellants’ claimed aqueous coating composition. Rather, Appellants only state that “[t]he comparative examples shown in the application are representative of the prior art including Friel. . . .” (Br. 7). However, Appellants do not indicate which comparative examples (i.e., Comparative Examples A, B, C, or D), if any, correspond to Friel’s composition for comparison with Appellants’ aqueous coating composition exemplified in Examples 1 and 2. Accordingly, we cannot determine from Appellants’ evidence how the claimed aqueous coating composition compares with Friel’s aqueous coating composition.

Specifically, because Appellants fail to indicate which comparative example corresponds to the Friel’s aqueous coating composition, Appellants have not proven that Friel’s aqueous coating composition does not possess the scrub resistance of Appellants’ claimed aqueous coating composition. *Best*, 562 F.2d at 1255, 195 USPQ at 433. Thus, Appellants have not carried their burden of proving that Friel’s aqueous coating composition is different than and does not possess the same characteristic (i.e., scrub resistance) as Appellants’ aqueous coating composition such that Friel’s aqueous coating composition does not anticipate or, in the alternative, render obvious Appellants’ aqueous coating composition. *Id.*

Furthermore, as the Examiner indicates, the data provided by Examples 1 and 2 and Comparative Examples A, B, C, and D are not

commensurate in scope with the invention recited in claim 2. As the Examiner indicates in Table 2 on page 7 of her Answer, Appellants' Examples 1 and 2 and Comparative Examples A, B, C, and D are directed to only one type of acrylic emulsion polymer made with specific monomers, initiator, and neutralizer, whereas claim 2 recites the monomers, initiator, and neutralizer in generic language (e.g., "thermal initiator" or "monoethylenically unsaturated acid monomer") (Answer 7, Table 2; claim 2). Objective evidence of nonobviousness must be commensurate in scope with the claims the evidence is offered to support. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983) (Claims were directed to certain catalysts containing an alkali metal. Evidence presented to rebut an obviousness rejection compared catalysts containing sodium with the prior art. The court held this evidence insufficient to rebut the prima facie case because experiments limited to sodium were not commensurate in scope with the claims).

Moreover, the amounts of the thermal initiator, the neutralizer, and the monomers used to make the emulsion polymer are claimed in terms of ranges (claim 2). However, data recited in Examples 1 and 2 and comparative examples A, B, C, and D provide data for only a single value within the range for each of the components of the emulsion polymer (Answer 7, Table 2; claim 2). Therefore, Appellants have not shown that the disclosed improvement in scrub resistance (i.e., unexpected results) occurs over the entire range of values for the claimed aqueous coating composition such that the claimed aqueous coating composition differs from Friel's aqueous coating composition over the entire range. *In re Peterson*, 315 F.3d



1325, 1331, 65 USPQ2d 1379, 1383 (Fed. Cir. 2003); *In re Clemens*, 622 F.2d 1029, 1035-36, 206 USPQ 289, 296 (C.C.P.A. 1980).

We add that Appellants define “scrub resistance” according to the ASTM Test Method D 2486-00 (hereinafter ASTM) (Specification 16). Appellants attach a copy of ASTM to the Brief (Appendix C). ASTM states that the test method measures “the resistance of wall paints to erosion caused by scrubbing referred to herein as “scrub resistance”” (ASTM 1). ASTM determines scrub resistance by measuring the “number of cycles” required for a brush to “remove one continuous thin line of paint film” (i.e., for the brush to penetrate the paint film down to its underlying substrate) (ASTM 3). The ASTM disclosure demonstrates that it is generally understood in the coating art that it is desirable to have a coating that resists erosion (i.e., good scrub resistance). Moreover, from the ASTM disclosure, coatings with poor scrub resistance would be easily removed by the brush such that a low number of cycles of the brush would be required to form a “continuous thin line” in the paint film being tested (i.e., the film would be easily pierced by the brush). Stated differently, a coating with good scrub resistance would be “hard” (i.e., not easily pierced).<sup>2</sup>

Friel discloses that “hardness” is an important physical characteristic of a coating composition (Friel, col. 1, ll. 39-41). The “hardness” of a coating is indicative of its “resistance to pressure” and its resistance to being “pierced.”<sup>3</sup> Therefore, it is reasonable to find that Friel’s coating

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<sup>2</sup> “Hard” is defined as “*not easily dented, pierced or crushed; resistant to pressure; firm and unyielding to the touch.*” (emphasis added) *Webster’s New World Dictionary* 659 (College ed. 1964).

<sup>3</sup> *Id.*

composition inherently has scrub resistance by virtue of the “hardness” of the coating.

In the alternative, it would have been prima facie obvious to optimize the “hardness” of the coating to provide a more durable coating in view of Friel’s disclosure that hardness is an important physical property. Friel recognizes “hardness” as an art recognized result effective variable such that it would have been obvious for an artisan with ordinary skill to develop workable or even optimum ranges for such art-recognized, result-effective parameters. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-1937 (Fed. Cir. 1990); *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980); *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

From the foregoing, the Examiner established a prima facie case of anticipation under § 102(b) or obviousness under § 103(a) of claims 1-5 and 7 over Friel, which Appellants have not sufficiently rebutted. Accordingly, we affirm the Examiner’s §§ 102(b)/103(a) rejections of claims 1-5 and 7.

### 35 U.S.C. § 103(a) REJECTION OVER FRIEL

Appellants do not separately argue the § 103(a) rejection of dependent claim 6 over Friel. Instead, Appellants rely on their arguments made with respect to the 35 U.S.C. §§ 102(b)/103(a) rejections which include independent claims 1 and 2 from which claim 6 depends.

We are unpersuaded by Appellants’ arguments regarding the §§ 102(b)/103(a) rejections for the reasons given above. Accordingly, we affirm the Examiner’s § 103(a) rejection of claim 6 over Friel.

DECISION

We have affirmed the §§ 102(b)/103(a) rejections of claims 1-5 and 7 over Friel.

We have affirmed the § 103(a) rejection of claim 6 over Friel.

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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